

REMARKS

Reconsideration and withdrawal of the objections and rejections set forth in the above-mentioned Official Action in view of the foregoing amendments and the following remarks are respectfully requested.

Claims 1-14 remain pending in the application, with Claims 1, 2 and 5-8 being independent. Claims 1-3, 5-8 and 11 have been amended herein.

Initially, Applicants note with appreciation the indication that Claims 3, 4 and 9-14 recite allowable subject matter. However, because independent Claims 2 and 8, on which Claims 3, 4 and 9-14 depend, are believed to be patentable for the reasons discussed below, these claims will not be rewritten in independent form at this time.

Claims 1, 2, 5, 6 and 8 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent Application Publication No. 2002/0105557 (Teshigawara et al.). Claim 7 was rejected under 35 U.S.C. § 103 as being unpatentable over Teshigawara et al. in view of U.S. Patent No. 6,682,170 (Hotomi et al.). These rejections are respectfully traversed.

Independent Claims 1 and 6 recite, *inter alia*, a first printing operation mode in which one dot layout pattern is assigned to a (plurality of) pixel(s) at or corresponding to a predetermined gradation level from among a plurality of gradation levels and printing is done on the basis of the assigned dot layout pattern, and a second printing operation mode in which plural types of dot layout patterns are assigned to a (plurality of) pixel(s) at or corresponding to the predetermined gradation level and printing is done of the basis of the assigned dot layout

patterns. The first printing operation mode can find support at least in Figures 7A to 7C, while the second printing operation mode can find support at least in Figures 10A to 10C.

With the above method and arrangement, the predetermined gradation level in the first printing operation mode is the same as that in the second printing operation mode. Accordingly, only one dot layout pattern can be assigned to a predetermined gradation level (e.g., quantization level =1) in the first printing operation mode (Figure 7C), while a plurality of layout patterns are available to the same predetermined gradation level (e.g., quantization level =1) in the second printing operation mode (Figure 10C).

Teshigawara et al. relates to a printing data producing method for a printing apparatus in which dots of a plurality of sizes are selectively used depending on the region of the image, for example, a highlight portion or an intermediate gradation portion. Figures 4A to 4E and 5A to 5D show index patterns using a print data producing process. As understood by Applicants, in Teshigawara et al., Figures 4A to 5D show a technique of using a single dot layout pattern for a particular gradation level (e.g., level 2 shown in Figure 4C), while using plural dot layout patterns for another gradation level (e.g., level 1 shown in Figure 4B). Teshigawara et al. does not disclose or suggest selectively using a single dot layout pattern or plural dot layout patterns for the same gradation level. Accordingly, Teshigawara et al. fails to disclose or suggest important features of Claims 1 and 6 outlined above.

Hotomi et al. describes an image forming apparatus that can produce patterns of matrices for different tones as shown in, for example, Figure 32. Hotomi et al., however, is

not believed to remedy the deficiencies of Teshigawara et al. noted above with respect to independent Claims 1 and 6.

Thus, independent Claims 1 and 6 are patentable over the citations of record.

Independent Claims 2 and 8 recite, *inter alia*, determining a dot layout pattern to be assigned to each pixel in accordance with at least one item of information from among information on a size of the printing medium and information on a size of image data. At page 3, the Office Action suggests in Teshigawara et al. “it is inherent that the different levels of bit signal in figures 4-5 correspond to the size of image data, for example the data amount of level 2 is greater than the data amount of level 1, level 3 greater than level 2, and 1, and so on... .” However, Applicants submit that in Figures 4A to 5D of Teshigawara et al., a bit signal is always represented by four bits. For example, the bit signal is “0000” for level 1, “0001” for level 2, and “0010” for level 3. In other words, the bit signal is represented by four bits regardless of the value of the level. Teshigawara et al. is not believed to disclose or suggest important features of the present invention recited in independent Claims 2 and 8. Further, Hotomi et al. is not believed to remedy the deficiencies of Teshigawara et al. with respect to these claims.

Accordingly, independent Claims 2 and 8 are also patentable over the citations of record.

Independent Claim 5 recites, *inter alia*, a first printing operation mode in which one dot layout pattern is assigned to a plurality of pixels at a same gradation level and printing is done on the basis of the assigned dot layout pattern, a second printing operation mode in which plural types of dot layout patterns are assigned to a plurality of pixels at the same

gradation level and printing is done on the basis of the assigned dot layout patterns, and whether the first printing operation mode or the second printing operation mode is to be executed is determined based on an information on a size of the printing medium. Teshigawara et al. does not suggest this combination of features. Moreover, determination based on the size of the printing medium is not addressed in the Office Action. Hotomi et al. is not believed to remedy these deficiencies.

Accordingly, independent Claim 5 is also patentable over the citations of record.

Regarding Claim 7, although Claim 4 does not depend thereon, the features of Claim 4 noted to be allowable in the Office Action have been nevertheless incorporated therein. The citations of record are not believed to disclose or suggest the claimed combination of features. Accordingly, Claim 7 is also patentable over the citations of record.


Thus, independent Claims 1, 2 and 5-8 are patentable over the citations of record. Reconsideration and withdrawal of the §§ 102 and 103 rejections are respectfully requested.

For the foregoing reasons, Applicants respectfully submit that the present invention is patentably defined by independent Claims 1, 2 and 5-8. Dependent Claims 3, 4 and 9-14 are also allowable, in their own right, for defining features of the present invention in addition to those recited in the independent claims. Individual consideration of the dependent claims is requested.

Applicants submit that the present application is in condition for allowance. Favorable reconsideration, withdrawal of the rejections set forth in the above-noted Office Action, and an early Notice of Allowability are requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

  
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